

REMARKS

Applicants respectfully request further examination and reconsideration in view of the above amendments. Claims 1-19 remain pending in the case. Claims 1-3, 5, 6, 8-10 and 13 are rejected. Claims 4, 7, 11 and 12 are objected to. Claims 14-19 are allowed. Claim 1 is amended herein. No new matter has been added.

ALLOWABLE SUBJECT MATTER

Applicants wish to thank the Examiner for the indication that Claims 4, 7, 11 and 12 would be allowable if rewritten in independent form including the limitations of their base Claims and any intervening Claims. Applicants also wish to thank the Examiner for the indication that Claims 14-19 are allowed.

35 U.S.C. §103(a)

Claims 1-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent 5,900,953 by Bottou et al., hereinafter referred to as the "Bottou" reference, in view of United States Patent 6,373,981 by de Queiroz et al., hereinafter referred to as the "de Queiroz '981" reference. Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 1-3 are not unpatentable over the Bottou in view of de Queiroz '981 in view of the following rationale.

Applicants respectfully direct the Examiner to independent Claim 1 that recites that an embodiment of the present invention is directed to (emphasis added):

A method of decomposing an image comprising:
decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image;

determining a layer base color, a layer size and a layer offset of at least one stripe of the plurality of stripes;

separating the stripe into a foreground layer, a background layer and a mask layer based on the layer base color and the layer offset; and

interpolating irrelevant pixel values in the foreground layer and background layer for coder efficiency.

Claims 2 and 3 that depend from independent Claim 1 provide further recitations of the features of the present invention.

Bottou and the claimed invention are very different. Applicants understand Bottou to teach a method and apparatus for extracting a foreground image and a background image from a color document image. Essentially, Bottou teaches extracting foreground and background images by dividing the color document into a plurality of multiscaled grids (Abstract; col. 1, lines 49-51). In particular, Bottou teaches that each grid includes a plurality of blocks and the resolution of the plurality of blocks increases for each successive grid (Abstract; col. 1, lines 51-53).

Bottou does not render the claimed embodiments of the invention unpatentable because Bottou does not teach, describe or suggest a method is provided for “decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image,” (emphasis added) as claimed. As described in the current specification, stripes of a striped document are decomposed and analyzed (page 3, line 29 through page 4, line 1). Striped document 220 of Figure 2 shows compound document 210 striped into a plurality of stripes, wherein the stripes span opposing edges of striped document 220.

In contrast, Bottou teaches extracting foreground and background images by dividing the color document into rectangular blocks of pixels of a single size. Specifically, the document is divided into a plurality of multiscaled grids, with each grid including a plurality of blocks. Figure 4 illustrates an image divided into a grid of rectangular blocks. As defined in Webster’s New Third International Dictionary, a grid is defined as “a network of uniformly spaced horizontal and vertical lines.” Therefore, Applicants understand the blocks as taught in Bottou to be square, wherein each side of the block has the same number of pixels. In particular, Bottou teaches a highest resolution block size of twelve pixels by twelve pixels, and that successive grids are built based by multiplying the block width and height by four, generating square blocks of reduced resolution (col. 6, lines 57-64). Therefore, Applicants respectfully assert that Bottou does not teach, describe or suggest “decomposing the image into a plurality of stripes”

(emphasis added), as claimed. Furthermore, by teaching the use of square blocks generated from a plurality of multiscaled grids, Bottou teaches away from the use of stripes of the claimed invention.

Moreover, the individual blocks of Bottou do not span the image. In particular, Figure 4 illustrates an image divided into a grid of rectangular blocks, wherein none of the blocks span the image. Figures 5 and 6 illustrate grids of blocks of successively smaller sizes. Therefore, Applicants respectfully assert that Bottou does not teach, describe or suggest “decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image” (emphasis added), as claimed.

Applicants respectfully submit that Bottou does not teach or suggest “decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image,” as claimed. On the contrary, Bottou teaches a method for extracting background and foreground colors from an image using a plurality of multiscaled grids, in which rectangular blocks of the grids do not span the image.

Moreover, the combination of Bottou and de Queiroz '981 fails to teach or suggest the claimed embodiments because de Queiroz '981 does not overcome the shortcomings of Bottou. De Queiroz '981, alone or in combination with Bottou, does not show or suggest a method of decomposing an image including

"decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image," as claimed. As described above, Bottou teaches a method for extracting background and foreground colors from an image using blocks of a plurality of multiscaled grids.

De Queiroz '981 and the claimed invention are very different. Applicants understand de Queiroz '981 to teach a technique for compressing a pixel map. In particular, de Queiroz '981 teaches a method for segmenting image data by classifying a block of data using several criteria and subsequently updating the classification considering the context of the data (col. 6, lines 24-28). Moreover, de Queiroz '981 teaches that each block is processed individually. Specifically, processing is performed on a block-by-block basis, and not on a stripe (col. 1, lines 63-67).

With reference to Figure 3 of de Queiroz '981, and the accompanying description, a block of a pixel map (block 18 of pixel map 10 of Figure 2) is acquired at step 210. The block is then classified at step 220. At step 230, the block is segmented according to the classification. Applicants respectfully assert that de Queiroz '981 specifically teaches classifying a block. A stripe can comprise a number of blocks (col. 1, lines 63-66). In particular, a block comprises N by N pixels, while a stripe can comprises N by M pixels, therefore a block is not a stripe. In order to classify a stripe, as suggested by the Examiner, the classification for a block must first be completed. Applicants understand de

Queiroz '981 to teach that processing the image in blocks (N x N pixels) provides for improved image processing efficiency (col. 5, lines 35-38).

In contrast, embodiments of the claimed invention are directed towards a method for decomposing an image including "decomposing the image into a plurality of stripes" (emphasis added). Applicants respectfully assert that a stripe as claimed is not a block as recited in de Queiroz '981. Furthermore, by specifically teaching the use of a block, de Queiroz '981 teaches away from the classifying of a stripe.

Applicants respectfully assert that nowhere does the combination of Bottou and de Queiroz '981 teach, disclose or suggest the present invention as recited in independent Claim 1, and that Claim 1 is thus in condition for allowance. Therefore, Applicants respectfully submit that the combination of Bottou and de Queiroz '981 also does not teach or suggest the additional claimed features of the present invention as recited in Claims 2 and 3 that are dependent on allowable base Claim. Applicants respectfully submit that Claims 2 and 3 overcome the rejection under 35 U.S.C. § 103(a) as these claims are dependent on allowable base claims.

Claims 5, 6, 8-10 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bottou in view of de Queiroz '981, and further in view of and "On data Filling Algorithms for MRC Layers" by de Queiroz, hereinafter referred

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to as the "Data Filling" reference. Claims 5, 6, 8-10 and 13 are dependent on allowable base Claim 1. Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 5, 6, 8-10 and 13 are not unpatentable over the Bottou in view of de Queiroz '981, further in view of Data Filling, for the following rationale.

As described above, the combination of Bottou and de Queiroz '981 does not teach describe or suggest the embodiments of the present invention recited in Claim 1. Moreover, the combination of Bottou, de Queiroz '981 and Data Filling fails to teach or suggest the claimed embodiments because Data Filling does not overcome the shortcomings of Bottou and de Queiroz '981. Data Filling, alone or in combination with Bottou and de Queiroz '981, does not show or suggest a method of decomposing an image including "decomposing the image into a plurality of stripes, wherein at least one stripe of the plurality of stripes spans opposing edges of the image," as claimed.

Applicants respectfully assert that nowhere does the combination of Bottou, de Queiroz '981 and Data Filling teach, disclose or suggest the present invention as recited in independent Claim 1, and that Claim 1 is thus in condition for allowance. Therefore, Applicants respectfully submit that the combination of Bottou, de Queiroz '981 and Data Filling also does not teach or suggest the additional claimed features of the present invention as recited in Claims 5, 6, 8-10 and 13 that are dependent on allowable base Claim. Applicants respectfully

submit that Claims 5, 6, 8-10 and 13 overcome the rejection under 35 U.S.C. § 103(a) as these claims are dependent on allowable base claims.

CONCLUSION

In light of the above remarks, Applicants respectfully request reconsideration of the rejected claims. Based on the arguments presented above, Applicants respectfully assert that Claims 1-13 overcome the rejections of record and, therefore, Applicants respectfully solicit allowance of these Claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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